

**This Page Is Inserted by IFW Operations  
and is not a part of the Official Record**

## **BEST AVAILABLE IMAGES**

**Defective images within this document are accurate representations of the original documents submitted by the applicant.**

**Defects in the images may include (but are not limited to):**

- **BLACK BORDERS**
- **TEXT CUT OFF AT TOP, BOTTOM OR SIDES**
- **FADED TEXT**
- **ILLEGIBLE TEXT**
- **SKEWED/SLANTED IMAGES**
- **COLORLED PHOTOS**
- **BLACK OR VERY BLACK AND WHITE DARK PHOTOS**
- **GRAY SCALE DOCUMENTS**

**IMAGES ARE BEST AVAILABLE COPY.**

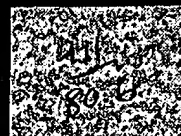
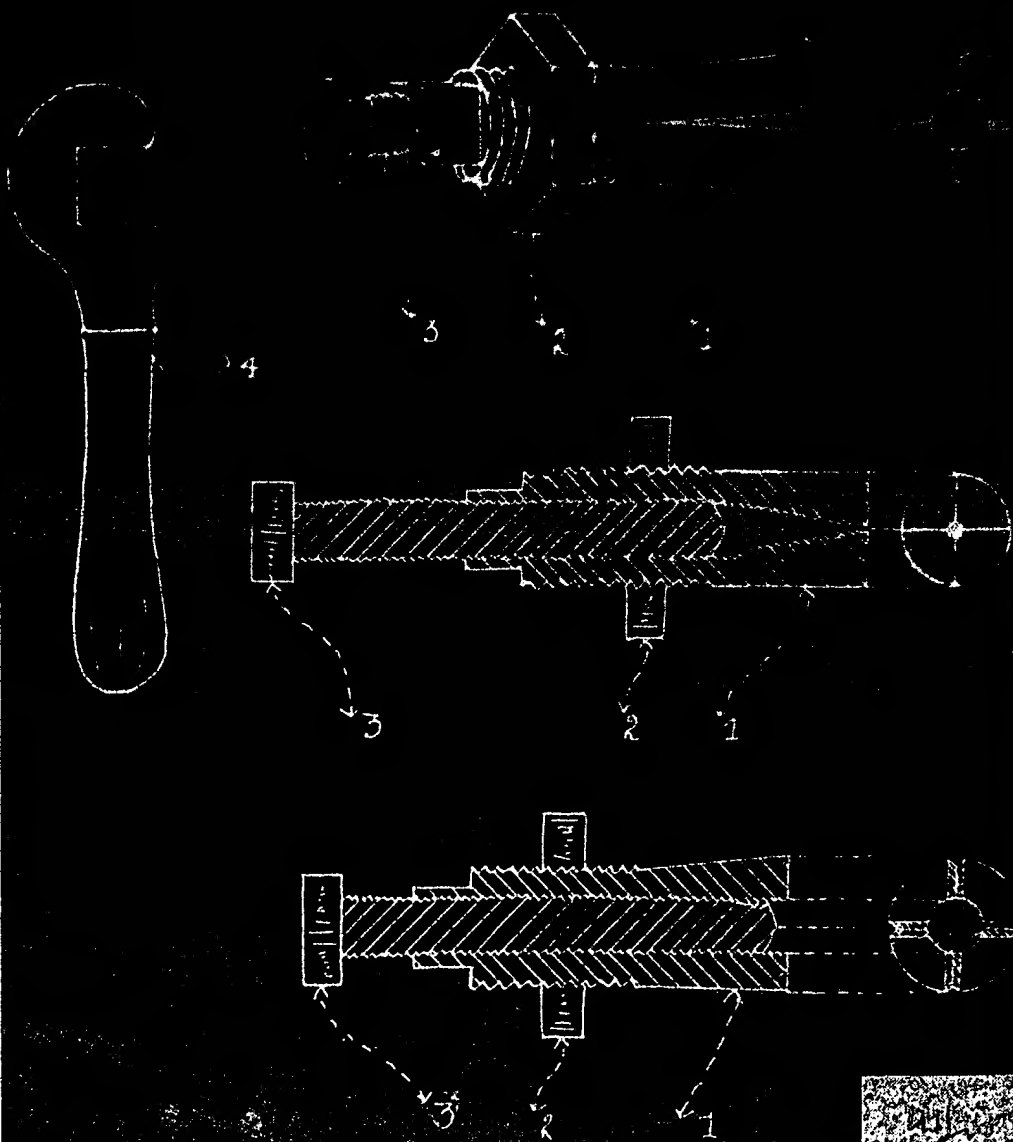
**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

411-0020

NO. 3021

37710

GB 0000 22048 A  
OCT 1899



N<sup>o</sup> 22,048



A.D. 1898

Date of Application, 20th Oct., 1893

Complete Specification Left, 14th July, 1899—Accepted, 20th Oct., 1899.

PROVISIONAL SPECIFICATION.

**An Improved Plug for Stopping Holes in Ships Hulls, Boilers, Tanks and the like, Applicable also for Replacing Rivets and Studs.**

EDMUND READ, Mechanical Engineer, Hope Villa, 7, Liverpool Road, Saint Albans, in the County of Hertfordshire, I, Edmund Read, Mechanical Engineer, do hereby declare the nature of this invention to be as follows:—

A piece of metal afterwards to be called the plug of any suitable shape and material with a nut screwed on one end. The plug is bored and screwed through the centre of its entire length for the purpose of receiving a taper ended screw "afterwards" to be called the expanding screw. The plug is tapered at one end and this end is slotted across and across its centre (thus forming four segments) the slots being cut tapered to allow the centre hole to be nearly closed when segments are pressed together. When segments are pressed ready for use the taper end is about parallel with the screwed end so that it can be passed through the plates of ship, boiler, tank, or the like.

MODE OF WORKING.

To stop a hole in hull of ship while afloat "either above" or below "the water line" from the inside, or in a boiler, or tank, or the like from the outside, viz.:  
 15 Press the aforesaid plug through the hole until the depth of slots or segments has passed the outside plate. Then screw down expanding screw until the top of nut has passed through the plug, the plug being held in position by a key fitted on the nut end of plug, the expanding screw pressing against the closed  
 20 parts of segments forces them outwards thereby forming a kind of rivet head, the nut on opposite end is then screwed down on grommet & washer making a secure joint. To replace a broken stud in cylinders or steam jackets or the like, "where possible" drill through hole, and repeat process as per ships, boiler, &c. the same where there is difficulty in passing a bolt (viz.) drop in  
 25 plug & screw down expanding screw, & tighten nut, or where it is not possible to hold up behind a rivet (as in upright boilers) between fire box and outer shell or bottom, would sometimes save fixing a screwed patch.

Dated this 19th day of October 1898.

EDMUND READ.

COMPLETE SPECIFICATION.

**An Improved Plug for Stopping Holes in Ships Hulls, Boilers, Tanks, and the like, Applicable also for Replacing Rivets and Studs.**

I, Edmund Read, Mechanical Engineer, do hereby declare that I, Edmund Read, Mechanical Engineer, do hereby declare the nature of this invention to be as follows:—

*Read's Improved Plug for Stopping Holes in Ships Hulls, Boilers, Tanks, &c.*

nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

And consists of the following parts—afterwards to be called—1, the plug, 2, the nut—for making joint, 3, expanding screw, 4—the handle.

The plug 1 is a piece of metal of any suitable shape and material, bored, 5  
“and a threaded screw cut—through the centre of its entire length for the purpose  
of receiving the expanding screw, 3. The expanding screw 3 has a small handle 4,  
attached for holding plug in position when being fixed. One end of said screw  
is tapered. The plug 1 is tapered at one end and screwed to receive nut 2—at  
the opposite end. The face of the tapered end is slotted across—and across its 10  
centre the slots being any suitable depth and are made wedge shaped to permit  
the segments of slotted end being pressed together. The slots across the tapered  
end of plug 1 having formed 4 segments of equal proportions. When the segments  
are pressed together the slotted end becomes parallel with the screwed end—  
thus forming the plug into form for inserting through the hole to be stopped, 15  
the expanding screw 3, being drawn back ready for forcing the segments out-  
wards and thereby forming a sort of rivet head, the nut 2 is for making the  
joint, and after the expanding screw 3 has been forced hard down on plug 1,  
(When in Working) The plug 1 is passed through the hole to be stopped until  
the tapered end is clear of the opposite side of plate, then turn expanding screw 3 20  
until the head of same is hard down on plug 1, by this time the taper end of  
expanding screw 3 has passed through the plug 1, thereby forcing the 4 seg-  
ments of slotted end outwards” and a kind of rivet head is formed, the nut 2 is  
then drawn hard on the plate—thereby drawing the segments tight against  
the opposite side of plate” and forming a joint. 25

Having now particularly described and ascertained the nature of my said  
invention, and in what manner the same is to be performed, I declare that

Edmund Read, of the City of London, Engineer, is the proprietor of the said  
invention, and he claims for the same a patent.

30

In witness whereof I have hereunto set my hand and seal the 14th day of July 1898.

EDMUND READ.

Witness my hand and seal the 14th day of July 1898.